Maximum Marks: 06 **(OBJECTIVE TYPE)** Time Allowed: 10 Min.

**NOTE:** Tick The Correct Option:

1. How should the conditions be changed to prevent the volume of a given gas form expanding when its mass is increased?
   (a) Temperature is lowered and pressure is increased.
   (b) Temperature is increased and pressure is lowered.
   (c) Temperature and pressure both are lowered.
   (d) Temperature and pressure both are increased.

2. Partial pressure of oxygen in human lungs in torr is:
   (a) 161 torr     (b) 116 torr     (c) 159 torr     (d) 760 torr

3. Graphically, Boyle's law is represented by:
   (a) An isobar     (b) A positive slope     (c) An isotherm     (d) A negative slope

4. Which is the correct formula for temperature conversion?
   (a) $K = °C - 273.16$
   (b) $°C = 9/5(F - 32)$
   (c) $°F = 5/9(°C) + 32$
   (d) $°F = 9/5(°C) + 32$

5. The number of molecules in 1 $dm^3$ of $CH_4$ at STP:
   (a) $2.68 \times 10^{22}$     (b) $6.02 \times 10^{22}$     (c) $6.02 \times 10^{23}$     (d) $6.02 \times 10^{24}$

6. In solids, temperature is the measure of _____ kinetic energy of the molecules.
   (a) Translational     (b) Rotational     (c) Vibrational     (d) All

Maximum Marks: 24 **(SUBJECTIVE TYPE)** Time Allowed: 40 Min.

## SECTION-I

**Q.2: GIVE BRIEF ANSWERS TO THE FOLLOWING QUESTIONS:** (16)

i. The graph between P and PV is a straight line. Explain why?

ii. Throw some light on the factor 1/273 in Charles's law.

iii. Absolute zero is the lowest possible (coldest) temperature. Explain.

iv. Why are the densities of gases expressed in the units of g $dm^{-3}$, while that of liquids and solids are expressed in units of g $cm^{-3}$?

v. State Dalton's law of partial pressures. Give its expression.

vi. How does Dalton's law help in calculating the pressure of gas collected over water?

vii. How does heat flow from hotter to colder body?

viii. Where is plasma found?

## SECTION-II

**NOTE:** Attempt All Questions: (08)

Derive an expression from general gas equation to calculate the density of gas.

Explain Boyle's law and Avogadro's law on the basis of KMT.